

**IN THE CLAIMS:**

Claim 8 has been amended.

1. (previously presented) A method, comprising:

receiving a plurality of packets and inserting the plurality of packets in a packet queue;

classifying the packets according to a classification criterion after the plurality of packets

have been inserted in the packet queue;

sending a packet bundle and a corresponding packet bundle descriptor to a host wherein  
the packet bundle is generated using the packets that are uniformly classified with respect to the  
classification criterion; and

receiving the packet bundle and the corresponding packet bundle descriptor; and

processing the packet bundle according to the corresponding packet bundle descriptor.

2. (previously presented) The method according to claim 1, wherein said sending

comprises:

determining the packet bundle for transfer according to a pre-determined criterion;

generating the packet bundle and its corresponding packet bundle descriptor; and

transferring the packet bundle and its corresponding packet bundle descriptor to the host.

3. (original) The method according to claim 2, wherein:

the classification criterion includes a session number; and

the pre-determined criterion includes a priority associated with a packet.

4. (previously presented) A method for an input and output controller, comprising:

receiving a plurality of packets in a packet queue;

classifying the packets in the packet queue according to a classification criterion, the

classifying including looking ahead in the packet queue to classify the packets in the packet

queue; and

sending a packet bundle to a host wherein the packet bundle includes a number of packets that are uniformly classified with respect to the classification criterion..

5. (previously presented) The method according to claim 4, wherein said sending includes:

determining the packet bundle for transfer according to a pre-determined criterion; generating the packet bundle and its corresponding packet bundle descriptor; and transferring the packet bundle and its corresponding packet bundle descriptor to the host.

6. (original) The method according to claim 5, wherein:

the classification criterion includes a session number; and

the pre-determined criterion includes a priority associated with a packet.

7. (previously presented) A method for a classification based packet transferring mechanism, comprising:

receiving a plurality of packets and inserting the packets in a packet queue;

classifying the packets according to a classification criterion;

rearranging an order of the packets in the packet queue based on the classifying of the packets; and

sending a packet bundle to a host wherein the packet bundle includes a number of packets that are uniformly classified with respect to the classification criterion.

8. (currently amended) The [[system]] method according to claim 7, wherein said sending includes:

determining the packet bundle for transfer according to a pre-determined criterion; generating the packet bundle and a corresponding packet bundle descriptor; and

transferring the packet bundle and its corresponding packet bundle descriptor to the host.

9. (original) The method according to claim 8, wherein:

the classification criterion includes a session number; and

the pre-determined criterion includes a priority associated with a packet.

10. (original) The method according to claim 9, wherein the packet bundle descriptor includes:

a bundle descriptor providing information about the packet bundle; and

at least one packet descriptor each of which provides information about a packet in the packet bundle.

11. (previously presented) A method for a classification based packet transferring mechanism, comprising:

classifying packets according to a classification criterion; and

sending a packet bundle to a host wherein the packet bundle is generated using packets that are uniformly classified with respect to the classification criterion,

said sending including determining the packet bundle for transfer according to a pre-determined criterion, generating the packet bundle and a corresponding packet bundle descriptor, and transferring the packet bundle and the corresponding packet bundle descriptor to the host, the classification criterion including a session number, the pre-determined criterion including a priority associated with a packet, the packet bundle descriptor providing information about the packet bundle and at least one packet descriptor, each of which provides information about a packet in the packet bundle, and-said packet bundle descriptor including a number of packets in the packet bundle, a session number identifying the session information of the packets in the packet bundle, and a priority value specifying the priority of the packet bundle.

Claim 12 (cancelled).

13. (previously presented) A method for a host, comprising:

receiving a packet bundle and a corresponding packet bundle descriptor;

processing the packet bundle; and

updating a packet session according to the packet bundle descriptor using contents of the packet bundle.

14. (original) The method according to claim 13, further comprising:

identifying a session number from the packet bundle descriptor prior to said updating.

15. (previously presented) A system, comprising:

an input and output controller with a classification based packet transferring mechanism

for receiving packets and transferring a packet bundle with a corresponding packet bundle

descriptor; and

a host for receiving the packet bundle and the corresponding packet bundle descriptor and

for updating a session based on the packet bundle descriptor using contents of the packet bundle.

16. (previously presented) A system, comprising:

an input and output controller with a classification based packet transferring mechanism

for receiving packets and transferring a packet bundle with a corresponding packet bundle

descriptor; and

a host for receiving the packet bundle and its corresponding packet bundle descriptor and

for updating a session based on the packet bundle descriptor using contents of the packet bundle,

wherein the classification based packet transferring mechanism includes:

a packet classification mechanism for classifying received packets;

a packet grouping mechanism for generating the packet bundle using classified packets

and its corresponding packet bundle descriptor; and

a transfer scheduler for transferring, at a time determined based on a pre-determined criterion, the packet bundle and the corresponding packet bundle descriptor to the host.

17. (previously presented) The system according to claim 16, wherein the host comprises:

a notification handler for receiving the packet bundle and its corresponding packet bundle descriptor;

a packet bundle processing mechanism for processing the received packet bundle and the corresponding packet bundle descriptor; and

a session updating mechanism for updating the session according to the packet bundle descriptor using the contents of the packet bundle.

Claim 18. (cancelled).

19. (previously presented) An input and output controller, comprising:

a packet receiver for receiving a plurality of packets and inserting the plurality of packets into a packet queue; and

a classification based packet transferring mechanism for generating and transferring a packet bundle to a host and a corresponding packet bundle descriptor to a host, wherein the classification based packet transferring mechanism includes:

a packet classification mechanism for classifying the received plurality of packets according to a classification criterion after the plurality of packets have been inserted in the packet queue;

a packet grouping mechanism for generating the packet bundle based on the classified packets and the corresponding packet bundle descriptor; and

a transfer scheduler for transferring, at a time determined based on a pre-determined criterion, the packet bundle and its corresponding packet bundle descriptor to the host.

Claims 20 - 24 (cancelled).

25. (previously presented) A machine-accessible medium encoded with data, the data, when accessed, causing:

receiving a plurality of packets and inserting the plurality of packets into a packet queue;

classifying the packets according to a classification criterion after the plurality of packets

have been inserted in the packet queue;

sending a packet bundle and a corresponding packet bundle descriptor to a host wherein

the packet bundle includes a number of packets that are uniformly classified with respect to the

classification criterion;

receiving the packet bundle and the corresponding packet bundle descriptor; and

processing the packet bundle according to the corresponding packet bundle descriptor.

26. (previously presented) The medium according to claim 25, wherein said sending

includes:

determining the packet bundle for transfer according to a pre-determined criterion;

generating the packet bundle and its corresponding packet bundle descriptor; and

transferring the packet bundle and its corresponding packet bundle descriptor to the host.

27. (previously presented) A machine-accessible medium encoded with data for input and output control, the data, when accessed, causes:

receiving a plurality of packets in a packet queue;

classifying the packets in the packet queue according to a classification criterion, the

classifying including looking ahead in the packet queue to classify the packets in the packet

queue; and

sending a packet bundle to a host wherein the packet bundle includes a number of packets that are uniformly classified with respect to the classification criterion.

28. (previously presented) The medium according to claim 27, wherein said sending includes:

determining the packet bundle for transfer according to a pre-determined criterion; generating the packet bundle and its corresponding packet bundle descriptor; and transferring the packet bundle and its corresponding packet bundle descriptor to the host.

29. (previously presented) A machine-accessible medium encoded with data for a classification based packet transferring mechanism, the data, when accessed, causes: receiving a plurality of packets and inserting the packets in a packet queue; classifying the packets according to a classification criterion; rearranging an order of the packets in the packet queue based on the classifying of the packets; and

sending a packet bundle to a host wherein the packet bundle includes a number of packets that are uniformly classified with respect to the classification criterion.

30. (previously presented) The medium according to claim 29, wherein said sending includes:

determining the packet bundle for transfer according to a pre-determined criterion; generating the packet bundle and its corresponding packet bundle descriptor; and transferring the packet bundle and its corresponding packet bundle descriptor to the host.

31. (previously presented) A machine-accessible medium encoded with data for a host, the data, when accessed, causes:

receiving a packet bundle and a corresponding packet bundle descriptor;  
processing the packet bundle; and  
updating a packet session according to the packet bundle descriptor using contents of the  
packet bundle.

32. (original) The medium according to claim 31, the data, when accessed, further  
causing:

identifying a session number from the packet bundle descriptor prior to said updating.

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